CLAIM OR CLAIMS

1. Print media with individualized signatures comprising;

a web divided into a succession of printable articles;

a plurality of conductivity patterns on the succession of printable articles; and,

the conductivity patterns differing between printable articles with a variability that is effectively random and detectable as signatures that differ from each other.

2. The media of claim 1 in which the conductivity patterns are at least partially formed on the web prior to dividing the web into the succession of printable articles and the differences between the conductivity patterns are formed by one or more in-line processes that are not repeated in registration with the succession of printable articles.

3. The media of claim 2 in which the in-line processes include printing out of registration with the succession of printable articles.

4. The media of claim 1 in which a portion of each of the conductivity patterns is formed as a reference pattern against which effectively random aspects of each of the conductivity patterns can be compared.

5. The media of claim 1 in which each of the conductivity patterns includes conductivity characteristics that are free to vary over a continuum.

6. The media of claim 1 in which the conductivity patterns are at least partially formed by a printable conductive medium that is applied in patterns.

7. The media of claim 6 in which the conductivity patterns differ from the patterns of the conductive medium in accordance with other variables that affect conductivity characteristics within the patterns of the conductive medium.

8. The media of claim 7 in which the other variables include variations within at least one of the conductive medium, the web, and interactions between the conductive medium and the web.

9. The media of claim 6 in which the patterns of the conductive medium differ between printable articles in a manner that is effectively random.

10. The media of claim 1 in which the conductivity patterns are formed at least in part by the application of a printable conductive medium to the web and are subject to variations in both distributions of the conductive medium over a surface of the web and distributions of conductivity within the surface distributions of the conductive medium.

11. The media of claim 10 in which the conductivity patterns are further subject to variations in the distribution of the conductive medium with respect to a depth dimension of the web normal to the web surface.

12. The media of claim 1 in which the conductivity patterns are formed at least in part by the application of a printable conductive medium to the web, and further comprising an intermediate layer supported by the web to which the conductive medium is applied.

13. The media of claim 12 in which the intermediate layer is a coating on the web.

14. The media of claim 12 in which the intermediate layer is an adhesive.

15. The media of claim 12 in which the intermediate layer is subject to variation for varying of least one of a distribution of the conductive medium over a surface of the web, a distribution of conductivity within the surface distributions of the conductive medium, and a distribution of the conductive medium with respect to a depth dimension of the web normal to the web surface.

16. The media of claim 1 in which the conductivity patterns are subject to further variation between the printable articles after being formed on the succession of the printable articles.

17. The media of claim 16 in which the further variation involves the application of kinetic energy for redistributing conductive elements of the conductivity patterns.

18. The media of claim 1 in which the web is made of a film, an adhesive layer is supported on the film, and the conductivity patterns are applied over the adhesive layer on the film.

19. The media of claim 18 in which the film is a magnetic film.

20. The media of claim 1 in which the web is a first of two webs, the first web is divided into a succession of first substrates, a second of the webs is divided into a succession of second substrates, and the first and second successions of substrates are laminated together to form the printable articles with the conductivity patterns located between the laminated substrates.

21. The media of claim 20 in which the conductivity patterns include separate conductivity patterns on the first and second successions of substrates.

22. The media of claim 21 in which the separate conductivity patterns overlap each other on the laminated substrates.

23. A set of printable articles having conductivity signatures comprising:

a plurality of printable substrates;

a conductive material associated with each of the printable substrates;

the conductive material being distributed between the printable substrates so that the conductive material contributes to the formation of individual conductivity patterns on the printable substrates; and

the conductivity patterns being detectable as unique signatures that differ from each other in an effectively random manner.

24. The articles of claim 23 in which the conductive material is preferably distributed within distinct areas that are discontinuous to avoid conductive connections between a beginning and end of the individual conductivity patterns.

25. The articles of claim 23 in which a portion of each of the conductivity patterns is formed as a reference pattern against which effectively random aspects of each of the conductivity patterns can be compared.

26. The articles of claim 23 in which each of the conductivity patterns includes conductivity characteristics that are free to vary over a continuum.

27. The articles of claim 23 in which the conductivity patterns are formed at least in part by the application of a printable conductive medium to the printable substrates.

28. The articles of claim 27 in which the conductivity patterns are subject to variations in distributions of the conductive medium over surfaces of the printable substrates.

29. The articles of claim 28 in which the conductivity patterns are subject to distributions of conductivity within the surface distributions of the conductive medium.

30. The articles of claim 28 in which the conductivity patterns are subject to variations in the distribution of the conductive medium with respect to a depth dimension of the printable substrates normal to the surfaces or the printable substrates.

31. The articles of claim 27 in which the printable substrates are treated in advance of the application of the conductive medium to the printable substrates for further varying the conductivity patterns between the printable substrates.

32. The articles of claim 31 in which the advance treatment of the printable substrates varies locally between the substrates so that an interaction of the conductive medium with the printable substrates also varies locally between the printable substrates.

33. The articles of claim 31 in which the advance treatment of the printable substrates affects at least one of porosity and surface morphology of the printable substrates.

34. The articles of claim 27 in which the printable substrates are treated subsequent to the application of the conductive medium to the printable substrates for further varying the conductivity patterns between the printable substrates.

35. The articles of claim 34 in which the subsequent treatment of the printable substrates varies locally between the substrates so that an interaction of the conductive medium with the printable substrates also varies locally between the printable substrates.

36. The articles of claim 34 in which the subsequent treatment redistributes conductive material on the printable substrates.

37. A laminated article having an internal identification feature comprising:

first and second substrates;

a layer of adhesive on the second substrate;

an identification feature printed on the layer of adhesive on the second substrate; and,

the first and second substrates being bonded together through the adhesive layer embedding the identification feature between the two substrates.

38. The article of claim 37 in which the identification feature is a conductivity pattern.

39. The article of claim 38 in which the conductivity pattern is formed at least in part by a printable conductive medium.

40. The article of claim 39 in which the conductivity pattern is subject to variations in both distributions of the conductive medium over a surface of the adhesive layer and distributions of conductivity within the surface distributions of the conductive medium.

41. The article of claim 40 in which the conductivity pattern is further subject to variation in a distribution of the conductive medium with respect to a depth dimension of the adhesive layer.

42. The article of claim 39 in which the conductivity pattern is further subject to variation accompanying the bonding of the two substrates.

43. The article of claim 37 in which the second substrate is a magnetic film.

44. A transfer printed article incorporating an identification feature comprising:

a first substrate, a conductive material, an adhesive material, and an overlying material,

wherein the conductive material is transferred together with the adhesive and the overlying material onto the first substrate from a second substrate so that the conductive material is set by the adhesive material between the first substrate and the overlying material for uniquely identifying the article.

45. The article of claim 44 in which the conductive material is arranged in a pattern that is detectable as a unique identifier.

46. The article of claim 45 in which the adhesive material bonds the overlying material to the first substrate.

47. The article of claim 46 in which the conductive material is embedded within an adhesive material.

48. The article of claim 44 in which the overlying material is a magnetic material.

49. The article of claim 48 in which the magnetic material is transferred onto the first substrate in the form of a magnetic stripe capable of encoding information magnetically.

50. The article of claim 49 in which the conductive material is arranged on the first substrate in a pattern that differs from a stripe.

51. The article of claim 44 in which the overlying material is an ink.

52. The article of claim 51 in which the conductive material is arranged on the first substrate in a pattern that is different from a pattern of the overlying ink material.

53. A magnetic tape having a conductivity signature comprising:

a magnetic film having a length and front and back surfaces; and

a conductivity pattern applied to at least one of the front and back surfaces in a form that varies in an effectively random manner along the length of the magnetic film.

54. The tape of claim 53 further comprising an adhesive layer on the back surface of the magnetic film and the conductivity pattern being applied to the adhesive layer in a form that varies in an effectively random manner along the length of the magnetic film.

55. The tape of claim 54 in which the conductivity pattern is formed at least in part by a printable conductive medium.

56. The tape of claim 55 in which the conductivity pattern is subject to variations in both distributions of the conductive medium over a surface of the adhesive layer and distributions of conductivity within the surface distributions of the conductive medium.

57. The tape of claim 56 in which the conductivity pattern is further subject to variation in a distribution of the conductive medium with respect to a depth dimension of the adhesive layer.

58. A method of converting print media for incorporating individualized signatures, comprising steps of:

advancing a web of printable stock along an in-line press;

applying a conductive material to the advancing web in a manner that varies along a length of the web; and

dividing the web into a succession of printable articles so that the conductive material contributes to the formation of conductivity patterns that differ between the printable articles in an effectively random manner and are detectable as unique signatures.

59. The method of claim 58 in which the conductive material applied to the web is within a printable conductive medium.

60. The method of claim 59 in which the conductive medium is applied by a plurality of stations that operate out of synchronism with each other.

61. The method of claim 60 in which the plurality of stations include print rollers that rotate at different speeds so that print patterns applied by the rollers remain out of registration with each other.

62. The method of claim 61 in which the print rollers print successions of lines that extend generally across a width of the web.

63. The method of claim 62 in which the lines vary between rollers in at least one of width, orientation, and nodal form.

64. The method of claim 60 in which concentrations of the conductive material within the conductive medium vary between the stations.

65. The method of claim 60 in which a rheological properties of the conductive medium vary between the stations.

66. The method of claim 59 in which concentrations of the conductive material vary as the conductive medium is applied along the length of the web.

67. The method of claim 59 in which rheological properties of the conductive medium vary as the conductive medium is applied along the length of the web.

68. The method of claim 59 in which the conductive medium is a conductive ink.

69. The method of claim 68 in which the conductive ink is an invisible ink.

70. The method of claim 58 in which a side-to-side weave is introduced into the advance of the web for further varying the conductivity patterns between the printable articles.

71. The method of claim 58 in which the web is treated in advance of applying the conductive material for further varying the conductivity patterns between the printable articles.

72. The method of claim 71 in which the advance treatment of the web varies locally on the web so that the interaction of the conductive material with the web also varies locally on the web.

73. The method of claim 72 in which the advance treatment of the web affects at least one of porosity and surface morphology of the web.

74. The method of claim 58 in which the web is treated subsequent to applying the conductive material for further varying the conductivity patterns between the printable articles.

75. The method of claim 74 in which the subsequent treatment of the web varies locally on the web so that the interaction of the conductive material with the web also varies locally on the web.

76. The method of claim 74 in which the subsequent treatment redistributes the conductive material in a direction that includes at least one of the length, a width, and a depth of the web.

77. The method of claim 76 in which the subsequent treatment includes the application of heat to the web.

78. The method of claim 76 in which the subsequent treatment includes embossing the web.

79. The method of claim 58 in which the advancing web is a first of two webs and the conductive material is applied from a second of the two webs.

80. The method of claim 79 in which a distribution of conductive material varies along a length of the second web.

81. The method of claim 80 in which the conductive material is applied together with an adhesive.

82. The method of claim 81 in which the conductive material is applied together with the adhesive and an overlying layer so that the conductive material is located between the first web and the overlying layer.

83. The method of claim 82 in which the overlying layer includes magnetic material.

84. The method of claim 82 in which the overlying layer includes an ink.

85. The method of claim 81 in which the conductive material is applied together with the adhesive and the second web so that the conductive material is located between the first and second webs.

86. The method of claim 58 in which the conductive material is applied in stages between one or more intervening layers.

87. The method of claim 86 in which the intervening layer is an adhesive.

88. The method of claim 86 in which the intervening layer is another substrate.

89. The method of claim 58 in which the advancing web is a first of two webs that are laminated together and divided into the succession of printable articles.

90. The method of claim 89 in which the conductive material is applied in a position between the two webs.

91. The method of claim 89 in which the conductive material is applied to both of the two webs.

92. The method of claim 58 including an additional step of printing timing marks registered with the succession of printable articles for providing a point of reference for detecting the unique signatures in a repeatable manner.

93. A method of converting printable articles for incorporating individualized signatures, comprising steps of:

associating a conductive material with a succession of printable articles;

variably distributing the conductive material between the printable articles so that the conductive material contributes to the formation of individual conductivity patterns on the printable articles; and

the conductivity patterns being detectable as unique signatures that differ from each other in an effectively random manner.

94. The method of claim 93 in which the conductive material is applied within a printable conductive medium.

95. The method of claim 94 in which the conductivity patterns formed by the conductive material within the conductive medium differ between the printable articles beyond the differences in applied patterns of the conductive medium.

96. The method of claim 94 in which at least one of the conductive medium and its application is varied between the printable articles.

97. The method of claim 96 in which concentrations of the conductive material within the conductive medium are varied between the printable articles.

98. The method of claim 96 in which rheological characteristics of the conductive medium are varied between the printable articles.

99. The method of claim 94 in which the printable articles are treated in advance of the individual applications of the conductive medium.

100. The method of claim 99 in which the advance treatment varies locally on the printable articles.

101. The method of claim 100 in which the treatment affects at least one of porosity and surface morphology of the printable articles.

102. The method of claim 94 in which the printable articles are treated subsequent to the individual applications of the conductive medium.

103. The method of claim 102 in which the subsequent treatment includes at least one of an application of heat to the printable articles and embossing the printable articles.

104. The method of claim 93 including the step of applying an intermediate layer that is located between the conductive material and the printable article.

105. The method of claim 104 in which the intermediate layer is treated for varying a distribution of the conductive material.

106. The method of claim 93 in which the conductive material is applied to the printable articles together with an adhesive.

107. The method of claim 106 in which an overlying layer is applied together with the adhesive and the conductive material.

108. The method of claim 107 in which the overlying layer includes magnetic material.

109. The method of claim 107 in which the overlying layer includes an ink.

110. The method of claim 93 in which the conductive material is incorporated within the printable articles.

111. The method of claim 93 in which the step of variably distributing conductive material includes forming a portion of the individual conductivity patterns as a reference pattern against which effectively random aspects of the conductivity patterns can be compared, the reference pattern assuring that the conductivity patterns are detectable and the effectively random aspects of the conductivity patterns assuring that the conductivity patterns are distinguishable from each other.

112. A method of registering printable articles, comprising steps of:

associating conductivity patterns with the printable articles so that the conductivity patterns differ between the printable articles in an effectively random manner;

ascertaining unique signatures of the conductivity patterns; and

recording the unique signatures of the conductivity patterns so that each of the printable articles is identifiable by the unique signature ascertained from the effectively random conductivity pattern of each printable article.

113. The method of claim 112 including a step of encoding the printable articles with a unique set of codes so that each of the printable articles is encoded with a unique code;

114. The method of claim 113 in which the unique codes are visible on a surface of the printable articles and the unique signatures are not.

115. The method of claim 113 in which the step of recording includes recording the unique signatures of the conductivity patterns together with the unique set of codes so that each of the printable articles is identifiable by a combination of the unique code of each printable article and the unique signature ascertained from the effectively random conductivity pattern of each printable article.

116. The method of claim 112 in which the step of associating includes incorporating the conductive material within a printable conductive medium that is applied in patterns to the printable articles.

117. The method of claim 116 in which the conductivity patterns formed by the conductive material within the conductive medium differ between the printable articles beyond the differences in the applied patterns of the conductive medium.

118. The method of claim 117 in which the patterns of the printable conductive medium encode information for further identifying and distinguishing the printable articles.

119. The method of claim 112 in which the step of ascertaining includes using a capacitive sensor to detect the unique signatures.

120. The method of claim 119 in which the step of ascertaining includes advancing the printable articles past the capacitive sensor in a repeatable manner.

121. The method of claim 112 in which the step of ascertaining the unique signatures includes sensing local variation in conductive characteristics within the conductivity patterns with a sensor that is operable within a range of the local variation.

122. The method of claim 121 in which the conductivity patterns differ between the printable articles in an effectively random manner substantially within the range of the local variation at which the sensor is operable.

123. A method of evaluating the authenticity of printed articles, comprising steps of:

reading a control code printed on one of the printed articles;

detecting a unique signature from the one printed article expressed by a pattern of conductive material that varies in an effectively random manner between the printed articles;

consulting a data base that stores signature information together with control code information for identifying the signature information associated with the control code of the one printed article; and

comparing the detected unique signature from the one printed article with the signature information stored in the database associated with the same control code for evaluating the authenticity of the one printed article.

124. The method of claim 123 in which the step of detecting includes referencing a feature of the printed articles for surveying a prescribed region of the printed article that includes at least a portion of the pattern of conductive material.

125. The method of claim 123 in which the step of detecting includes using a capacitive sensor to detect the unique signature.

126. The method of claim 125 in which the step of detecting includes advancing the printable article past the capacitive sensor in a repeatable manner.

127. The method of claim 123 in which the step of detecting the unique signature includes sensing local variation in conductive characteristics within the conductivity patterns with a sensor that is operable within a range of the local variation.

128. The method of claim 125 in which the conductivity patterns differ between the printable articles in an effectively random manner substantially within the range of the local variation at which the sensor is operable.

129. The method of claim 123 including a further step of distinguishing printed articles having signature information stored in the database from other printed articles that do not have signature information stored in the database.

130. A method of identifying a conductivity signature of a printable article, comprising steps of:

relatively moving a printable article having a conductivity pattern with respect to a capacitive sensor in a manner that presents different portions of the conductivity pattern to the capacitive sensor;

measuring the different portions of the conductivity pattern with the capacitive sensor as the printable article is relatively moved past the capacitive

sensor, the different portions having conductivity characteristics that are free to vary over a continuum; and

storing information concerning the different portions of the conductivity pattern representative of a unique signature associated with the printable article.

131. The method of claim 130 including a further step of accessing the stored information for subsequently comparing a re-measured conductivity pattern with the stored information for identifying the printable article by its unique signature.

132. The method of claim 130 including an additional step of acquiring a control code associated with the printable article.

133. The method of claim 132 in which the step of storing includes storing the control code together with the information concerning the different portions of the conductivity pattern so that the printable article is identifiable by a combination of the control code and its unique signature.

134. The method of claim 133 including a further step of accessing the database through the control code for subsequently comparing a re-measured conductivity pattern associated with a re-acquired control code with the stored information previously associated with the same control code for evaluating the authenticity of the printable article.

135. A system for identifying conductivity signatures of printable articles comprising:

a capacitive sensor arranged for measuring conductivity patterns appearing on printable articles;

each of the conductivity patterns that appear on individual printable articles differing from the conductivity patterns that appear on other of the printable articles;

the conductivity patterns having conductivity characteristics that vary over a continuum;

the capacitive sensor being arranged for making capacitive coupling measurements of the conducive patterns over multiple regions of each of the conductivity patterns for acquiring a data set for each of the conductivity patterns; and

the data set including measures of conductivity characteristics in the multiple regions for defining a unique signature associated with each of the printable articles.

136. The system of claim 135 in which the multiple regions are contiguous regions for measuring conductivity characteristics of the conductivity patterns throughout a common expanse.

137. The system of claim 135 further comprising a database containing representations of the unique signatures for identifying the printable articles.

138. The system of claim 137 further comprising a reader for acquiring control codes from the printable articles and in which the control codes are associated with the unique signatures in the database for further identifying the individual printable articles.

139. The system of claim 138 further comprising a processor that accesses the database through the control codes for comparing representations of the unique signatures acquired from the capacitive sensor with the representations of unique signatures associated with the same control codes in the database.

140. The system of claim 135 further comprising a transporter that relatively conveys the printable articles past the capacitive sensor.

141. The system of claim 140 in which the capacitive sensor is further arranged for making capacitive coupling measurements of the conductivity characteristics as a function of position on the substrate for acquiring an analog signature of the conductivity patterns.